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AUTHOR Richardson, Marcia; And Others
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ABSTRACT

A study investigated whether there was a relation between methods of language arts instruction and reading comprehension as measured by the Cloze-procedure. Subjects, 88 third-grade students in 4 classes (2 "traditional" and 2 "whole language") at 2 elementary schools in South Dakota, had their reading comprehension tested 6 months into the school year using a 35-item Cloze procedure. The two traditional teachers and the two self-taught whole-language teachers had identified themselves on a self-report measure of teaching strategies. Data from the comprehension test were analyzed using a t-test. Results indicated no significant difference between the reading comprehension of students instructed using traditional (basal reading) and whole language methods of instruction. (The teacher survey instrument, the checklist of classroom items normally found in a whole language environment, a sample Cloze-procedure passage, a sample of verbatim and acceptable answers, and a table of data are included.) (RS)

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Evaluation of Whole Language and Traditional Language Arts Instruction Using a Cloze-Procedure Test for Reading Comprehension

Marcia Richardson, June Apaza, and Diane Graff

South Dakota State University, West River Graduate Center

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Abstract

This study was formulated to determine the relation between methods of language arts instruction and reading comprehension. The design was post-test only using equivalent groups. Subjects were 88 third grade students from two elementary schools in South Dakota. Thirty-nine students were instructed using whole language methods, the remainder were instructed using traditional methods. Reading comprehension was tested using the Cloze-procedure. The reliability of the instrument was validated by a Kuder-Richardson 21. The data were analyzed using a t-test. No significant difference was shown between the traditional and the whole language methods of instruction. Other results might have been obtained if the researchers had provided the teacher training in whole language methods and increased the exposure of both the teachers and the students to the whole language methods.

Evaluation of Whole Language and Traditional Language Arts Instruction Using a Cloze-Procedure Test for Reading Comprehension

Introduction

We sought to determine if there as a relation between methods of language arts instruction and reading comprehension as measured by the Cloze-procedure. The current trend in language arts is to substitute the whole language approach for traditional programs. Contemporary journals abound with articles touting the advantages of the whole language approach although there is little in the research literature to defend this position.

For the purposes of this study the traditional approach to language arts will be defined as a basal based program. Most basal based programs are founded on Thorndyke's Laws of Learning. The basal based program presents skills in a specific and tightly controlled hierarchy. Thorndyke's Laws of Learning are defined as the following:

1. Teach - Pupils are taught skills before they are expected to use them.
2. Practice - There is immediate follow-up on what is taught.
3. Apply - What has been practiced is then applied in real reading. Retention is likely

because it comes right after teaching and practice.

4. Assess - So re-teaching can take place if needed.

(Goodman et al., 1988, p. 98)

In contrast, the philosophy of whole language is based on fundamental assumptions that incorporate the following:

Learning

is social;

requires risk-taking and experimentation;

involves construct meaning and relating new information to prior knowledge;

occurs when learners are actively involved,

when they have real purposes,

when they make choices and share in decision making;

uses language, mathematics, art, music, drama, and other communication systems as vehicles for exploration.

(Newman & Church, 1990, p. 23-24)

Teachers who use whole language techniques typically use a variety of strategies based on individual student needs. The dynamics involved in teaching whole language contrast with the traditional approach because the strategies are continually changing and evolving dependent

on the teacher's observations of the student and the teacher's understanding of learning theories.

Reading comprehension is a variety of complex processes working simultaneously to influence understanding. In an article reviewing reading comprehension models, Wade and Dewhirst (1983) emphasize "the importance of word recognition, syntactic and semantic cues, the relationship between ideas and the reasoning that goes on when children read" (p. 173). One of the goals of whole language instruction is to promote the recognition of meaning and structural cues. "Competent readers are able to integrate this semantic and syntactic information to predict what will appear next in a reading passage" (Kelly, 1982, p. 31). The comprehension of the reader can be demonstrated by the correct insertion of a missing word into a passage where a word has been deleted (Berrent, 1988). This grasp of semantic and syntactic cues can be tested by the use of the Cloze-procedure (Taylor, 1953).

Taylor's (1953) definition of the Cloze-procedure is "any single occurrence of a successful attempt to reproduce accurately a part deleted from a 'message'... by deciding from the context that remains, what the missing part should be" (p. 416). The standard Cloze-procedure deletes every fifth word without any regard for the functions or meanings of specific words. The substituted blanks are of equal length to insure the only clues come from the context. The

Cloze-procedure as a legitimate measurement of reading comprehension was validated by Bormuth (1969).

The standard method of scoring the Cloze-procedure is to accept only the deleted word exactly as found in the complete passage. Frequently, though, a student will respond with a word that is still entirely consistent with the meaning of the passage, yet not the exact word. Responses such as these seem to reflect understanding, yet would not be counted in the student's favor in standard scoring methods. Others have proposed accepting syntactically correct answers as a more complete measure of a student's comprehension (Ewoldt, 1977).

The percentage of correctly filled blanks is an indication that the passage is either too difficult, readable but challenging, or readily comprehensible. Levels of reading instruction are categorized by Jacobson (1990) as either frustration, instructional or independent level. The criteria used scores below 44% as in the frustration range; scores between 44% and 57% as in the instructional range; scores above 57% as falling in the independent range.

Hypothesis

Based on the background review of the literature on whole language, traditional language arts instruction, reading comprehension and Cloze-procedure the following

hypothesis was postulated:

> Students receiving whole language arts instruction as compared to students receiving traditional instruction would have significantly higher reading comprehension as tested by a Cloze-procedure.

Methods

Subjects

Third-grade students from a moderate sized metropolitan area in a rural state were targeted for the study. Two elementary schools in similar socioeconomic neighborhoods based on population and income were chosen. In each of the schools a large percentage of the students were Native American.

All third grade teachers from the two schools were invited to complete a survey of teaching strategies in language arts instructions. The instrument used was The Survey of Teaching Strategies in Language Arts Instruction (STSLAI), a researcher developed tool (see Figure 1).

Insert Figure 1 about here

It measured language arts instruction on a continuum from most traditional to most whole language. This was a 23 item, self-reported survey. Of the 23 strategies listed in the survey, 11 were traditional, 12 were whole language. The responses were weighted from a +2 to a -2. A +2 was

given to items with the most traditional application; a -2 to the most whole language application. Only yes answers were counted. There were a possible +18 points for traditional skills and a possible -20 points for whole language.

The two teachers identified as utilizing traditional strategies scored +11 and +14 out of +18 on the STSLAI. The two teachers identified as employing whole language techniques were self taught in whole language strategies and had used this technique for approximately two years. They respectively scored -11 and -7 out of -20.

To validate the self-report of teaching strategies, a checklist of classroom items was used (see Figure 2) to

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Insert figure 2 about here

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catalogue items normally found in a whole language environment. The absence of these items reflected a more traditional environment. There were a possible 65 components to assess. The assessment was conducted by the research team during on-site visits. The list was developed by Taylor, Blum and Logsdon (1986).

On the 65 item check list of class room items, the traditional teachers scored 10 and 13 respectively, the whole language teachers scored 41 and 22. The researchers

concluded that these scores supported the classification of these four teachers as either traditional or whole language.

The students of the two teachers with the greatest whole language and traditional scores were selected to participate. The whole language students received instruction utilizing the appropriate strategies for six months of the current school year. This resulted in 49 traditional and 39 whole language students.

Instrumentation

The 35 item Cloze-procedure (see Figure 3 for sample) was adapted from a reading skill building book grade level 2.9 through 3.2 (Healy, 1986).

Insert Figure 3 about here

A pilot study was run using the chosen passage with a third grade class not involved in the final study. Using Jacobson's (1990) levels of readability the passage was shown to be at the instructional level for at least two-thirds of the sample students tested.

Both verbatim and acceptable answers were scored. A verbatim answer had to match exactly with the missing word in the passage. Because the students were just at the third grade level, misspelling, singular or plural forms, and homonyms were accepted as verbatim answers. Acceptable responses were other one word answers, grammatically

correct, and syntactically meaningful. Again, because of the participants' third grade skill level, acceptable answers could be either singular or plural, could be misspelled, could interchange the words "a" or "an", and could change the verb tense of the paragraph if it remained consistent with the meaning of the sentence (see Figure 4 for sample of acceptable responses).

Insert Figure 4 about here

One strategy of the whole language method is to promote creative writing and a variety of alternate responses. It was suspected that this tactic might adversely impact verbatim answer scores. The relation between verbatim and acceptable scores was examined using the Pearson r correlation coefficient.

Research Design

The research design was a post-test only comparison, using equivalent groups. The equivalence of the groups was examined by comparing the participants' second grade reading comprehension group mean scores on the Scholastic Achievement Test. The mean score for the combined traditional class was 55.76, the mean score for the combined whole language class was 56.45, suggesting parity.

A student t-test was used to compare the mean scores between the two independent groups. The Kuder-Richardson 21

was used to establish the reliability of the Cloze-procedure passage.

Procedure

The identified classes were scheduled for a one-hour test administration period at the individual teacher's convenience. The students were instructed by the researchers to first read the entire passage before filling in each blank with only one word. They were given a short sample test to familiarize them with the instructions and the Cloze-procedure. After the sample passage was completed, the students were asked to give their responses. All possible answers were positively reinforced. The actual test passage was immediately administered. The passage included more items than were scored in order to keep all students on task during the testing period. This was done to prevent students who finished early from distracting others still working. The researchers monitored for completion of the first thirty-five items. Time was called when all students had reached that point. In general, the time for all students to complete the 35 items took twenty-five minutes. The tests were gathered for the researchers to score.

Results and Conclusions

The Cloze-Procedure reliability was estimated using Kuder-Richardson 21. Scores for the acceptable answers were

highly consistent (R = 0.969), as were the scores for the verbatim answers (R = 0.850). The acceptable and verbatim scores had a correlation coefficient of 0.895. A correction for attenuation shows a 0.99 correlation between both methods of scoring. For this study the researchers chose the slightly higher level of consistency in the acceptable answers over the convenience of using the verbatim answers. However, using just the verbatim answers in scoring required less time from the researchers and less opportunity for judgement errors when correcting and tabulating answers. The outcome was that whole language students were not at a disadvantage when the verbatim method of scoring was used.

The descriptive data for all groups tested and for the combined traditional and whole language groups was organized (see Table 1). Each performance is displayed for

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Insert Table 1 about here

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acceptable and verbatim answers. Due to similar treatment methods the two traditional class scores were combined as were the two whole language classes. A t-test compared the mean scores of the combined classes. The result of t = -0.60 for acceptable answers (df = 86) indicated no significant difference in reading comprehension of student receiving language arts instructions in traditional or whole language methods.

Discussion

The researchers postulated that there would be a difference in reading comprehension in favor of the students instructed by whole language techniques. The hypothesis was not supported by this study.

Suggestions for further studies would incorporate both randomization of the students to the teacher and an increase in sample size to present more opportunity for detection of significant differences. If the researchers would provide the teacher training, consistency and integrity of whole language instruction and the basal-based instruction could be better insured. A pretest Cloze-procedure prior to the treatment might provide another measure of group equivalency. The treatment itself could have a longer duration than the first six months of the school year. Perhaps a longitudinal study tracking the different groups through elementary school might show compounded effects not detected in early grade levels. More experience in whole language for both students and teachers may contribute to a more robust effect. Research efforts should continue to investigate the debate over the efficacy of whole language versus traditional language arts techniques.

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Figure Caption

Figure 1. Survey of teaching strategies in language arts instruction (STSLAI)

SURVEY OF TEACHING STRATEGIES IN LANGUAGE ARTS INSTRUCTION

Demographic Information

Please answer the following questions about yourself.

Name _____

Would you be willing to participate in this research project ? _____

Telephone number at which you can be reached day_____evening_____

Years of teaching experience _____

Number of children in your classroom _____

Best time to administer the one hour test to your class _____

Teaching Strategies

Please check the appropriate box to indicate the strategies in the list that you usually employ in you language arts instruction.

		YES	NO	WEIGHTED SCORE
1.	Language arts is basal based	1. ☐	☐	+1
2.	Phonics are taught independent of other instruction	2. ☐	☐	+2
3.	Writing is part of the reading instruction	3. ☐	☐	-2
4.	Formal evaluations are used	4. ☐	☐	+1
5.	Students spend 2 or more hrs/wk using worksheets	5. ☐	☐	+2
6.	Learning is based on need and moves to skill	6. ☐	☐	-2
7.	Students spend time each day with creative works	7. ☐	☐	-2
8.	Students choose topics	8. ☐	☐	-1
9.	Teachers assign topics	9. ☐	☐	+1
10.	Students use writing for personal purposes	10. ☐	☐	-2
11.	Students use writing to satisfy others	11. ☐	☐	+2
12.	Language learning is based on experience	12. ☐	☐	-1
13.	Evaluations are informal and ongoing	13. ☐	☐	-2
14.	Learning begins with skill and moves to need	14. ☐	☐	+2
15.	Invented spelling is encouraged	15. ☐	☐	-2

(Please continue on the other side)

Figure Caption

Figure 1 continued.

SURVEY OF TEACHING STRATEGIES IN LANGUAGE ARTS INSTRUCTION

Teaching Strategies

Please check the appropriate box to indicate the strategies in the list that you usually employ in you language arts instruction.

		YES	NO	WEIGHTED SCORE
16.	Process (versus product) is most important	16. ☐	☐	-2
17.	Handwriting is taught	17. ☐	☐	+1
18.	Students spend less than 1 hr/wk using worksheets	18. ☐	☐	-2
19.	Phonics are taught as needed (if at all)	19. ☐	☐	-1
20.	Reading is self-selected	20. ☐	☐	-1
21.	Product (versus process) is most important	21. ☐	☐	+2
22.	Language is learned through skills	22. ☐	☐	+2
23.	Correct spelling is emphasized	23. ☐	☐	+2

Thank you so much for your time in filling out this survey. Please remember to put it in the enclosed, self-addressed, stamped envelope and place it in the mail by February 4, 1991.

We will be in contact with you as soon as we receive your completed survey.

(Side Two)

Figure Caption

Figure 2. Checklist of classroom items normally found in a whole language environment

Books & Stories:

- A. Commercially published trade books
- B. Commercially published Big Books
- C. Commercially published reference books
- D. Commercially published informational trade books
- E. Individually authored child stories, i.e., shape books, mini books, Big Books, accordion books, etc.
- F. Group-authored Big Books
- G. Group-authored chart stories
- H. Group authored informational charts

Child-Authored Messages

- A. Notes
- B. Cards
- C. Invitations
- D. Letters
- E. Announcements

Adult-Authored Message

- A. Notes
- B. Cards
- C. Invitations
- D. Letters
- E. Announcements

References, Information, and Record-Keeping Lists:

- A. A sign-in board for attendance
- B. Color chart
- C. Number chart
- D. Alphabet chart
- E. Logo language wall
- F. Words-we-know list
- G. Songs-we-know list
- H. Our favorite books
- I. Lunch menu

Directions:

- A. Classroom rules
- B. Use of centers
- C. Activities directions
- D. Recipes
- E. Management schemes

Labeling:

- A. Location of centers
- B. Objects in the classroom
- C. Containers for children's personal belongings
- D. Mailboxes
- E. Coat racks
- F. Objects from home
- G. Captioned drawings
- I. Contents of cupboards

Writing:

- A. Paper
- B. Chalkboard
- C. Blank chart paper
- D. Blank Big Books
- E. Pencils
- F. Crayons
- G. Markers
- H. Three-holed punch
- I. Binding materials
- J. Stapler
- K. Magnetic letters
- L. Rubber Stamps
- M. Stencils

Supported or Sel-Selected Reading

- A. Shared-reading experience
- B. Group-language experience
- C. Read-along tapes and books
- D. Older children reading with younger children
- E. Senior-citizen volunteers
- F. Parents
- G. Library Center

Scheduling:

- A. Daily schedule
- B. Calendar
- C. Lunch time
- D. Classroom helpers

Appendix based on:

Taylor, N. E., Blum, I. H., & Logston, D.M. The development of written language awareness: Environmental and program characteristics. Reading Quarterly, 21(2) 132-149.

Figure Caption

Figure 3. Sample of the Cloze-procedure passage

Black Eagle

In 1820 Black Eagle was eight years old. That was the year his father gave him a pony. He chose a black pony. It had a white star on its forehead. He called the pony White Star.

The pony was not _____[1]_____ for fun. With a _____[2]_____, Black Eagle could learn _____[3]_____ hunt and help take _____[4]_____ of his family.

Black _____[5]_____ learned to hunt. He _____[6]_____ many days with the _____[7]_____. On other days, Black _____[8]_____ and White Star went _____[9]_____ the bank of the _____[10]_____. Black Eagle would fish _____[11]_____ swim. He was the _____[12]_____ swimmer in his tribe. _____[13]_____ had won many races.

Figure Caption

Figure 4. Sample of verbatim and acceptable answers

ANSWER NUMBER	VERBATIM ANSWERS	ACCEPTABLE ANSWERS
1	JUST	chosen, there, used, made, riden, exactly, really, trained, meant
2	PONY	horse, gun, friend, arrow, weapon, bow, lesson, teacher
3	TO	and
4	CARE	
5	EAGLE	
6	RODE	spent, had, stayed, hunted, worked, played, practiced, helped, rides, fought
7	HUNTERS	family, hunt, pony, horse, others, tribe, men, adults, chief, hunting, gun, bow
8	EAGLE	
9	TO	by, down
10	RIVER	stream, creek, pond, lake
11	AND	or, sometime
12	BEST	worst, poorest, first, fastest, greatest, lead
13	HE	they

Table 1

Descriptive Data of Test Results

	TEACHER SCORE			VERBATIM			ACCEPTABLE		
LANG ARTS METHOD	STSLAI SURVEY	CHECK LIST	CLASS SIZE	MEAN	SD	RANGE	MEAN	SD	RANGE
MOST TRADIT	+11	10	25	45.36	12.69	20-71	69.56	18.21	29-94
TRADIT	+4	13	24	43.50	8.92	29-57	66.04	15.61	37-89
MOST WHOLE LANG	-11	41	18	45.39	10.99	25-69	67.61	14.84	40-89
WHOLE LANG	-7	22	21	48.62	12.11	23-71	71.89	14.88	43.94
COMBIN TRADIT	-	-	49	44.45	10.93	20-71	67.84	16.91	29-94
COMBIN WHOLE LANG	-	-	39	47.13	11.57	23-69	69.90	14.82	40-94
TOTAL SAMPLE	-	-	88	45.64	11.23	20-69	68.75	15.96	29-94